MEETING AGENDA AND ACTION ITEMS
Hanford Site Technology Coordination Group
Management Council

November 19, 1997
EESB Snoqualmie Room
8:30 a.m. to 12:30 p.m.

Purpose

- To endorse the FY 1998 Science Needs
- To discuss the Subgroups' FY 1997 Annual Reports and FY 1998 Work Plans

Agenda

Introduction/Safety/Continuous Performance Improvement

Updates
-- Technology Update -- Macroencapsulation
-- Pilot Program for Technology Certification
-- D&D Canyon Disposition Initiative
-- X-Change '97 Global D&D Marketplace Symposium

1998 Hanford Science Needs -- **VOTE**
-- D&D Subgroup
-- Mixed Waste Subgroup
-- Subsurface Contaminants Subgroup
-- Tanks Subgroup

Future Agenda Items

Subgroup FY97 Annual Reports and FY98 Work Plans
-- Panel Discussion

Action Items

- Send TDI lessons learned information to Tom Engel (Dave Biancosino)
- Get Mixed Waste science needs package to Tom Engel for final approval (Joe Waring)
- Determine the status of the STCG Communications person (Rod Quinn)
- Provide schedule for Site tours (Dave Biancosino/FDH/BHI)

HANFORD SITE TECHNOLOGY COORDINATION GROUP
MANAGEMENT COUNCIL MEETING MINUTES

November 19, 1997
EESB, Snoqualmie Room
8:30 a.m. to 12:30 p.m.

INTRODUCTION/SAFETY/CONTINUOUS PERFORMANCE IMPROVEMENT

Lloyd Piper opened the meeting and introductions were made around the room.

Tom Anderson provided a safety topic. He drives a small, lightweight car. In wet weather, roads are slippery and there is not as much traction on the road. Slow down, keep more distance from other vehicles, and allow more time for braking.

Tom Anderson also offered a CPI topic. Most of us have taken classes in federal laws that prohibit sexual harassment. It might be a good idea to discuss ethics in a future meeting. He reminded the group that management has an obligation to follow up on sexual harassment and safety issues that are brought to their attention.

The EMAB Science Subcommittee was here on Site to review the EMSP. They spent two days with principal investigators and representatives of the scientific community, the STCG, and the regulators. Hanford is one of two sites they are visiting to see how the EMSP is working.

Gerald Boyd was here at Hanford, and the notes from the meeting were attached to the minutes. He met with the STCG and the HAB Dollars and Sense Committee. The discussions with him were fruitful.

Dave Biancosino presented the purpose of the meeting and the agenda.

UPDATES

Macroencapsulation

Greg Berlin introduced Tom Baker from Rust Federal Services Hanford to present an update on Macroencapsulation of Mixed Waste Debris. This project was jointly funded by EM-30 and EM-50. 880 drums were treated and then compacted by ATG Richland Operations. Seven or eight “pucks” were placed in 70-gallon drum overpacks and then sent back to T-Plant, where they were encapsulated by Arrow Construction. The final report is under review and will be released in the next 2-3 weeks.

In summary, this project accomplished the following:

- Successful completion of a joint EM-30/EM-50 project,
- Treated 185 cubic meters of waste, which supports TPA Milestone M-19-00, and
- Received excellent support from regulators.

An FY 1998 demonstration is planned for the Waste Management Macro-Secure macroencapsulation process.

Q - Tom Engel asked how this technology might be deployed.

A - This is one technology for macroencapsulation. There are many others, and we need to look at several. Over the next 2-3 years, we will be employing some technology. There are different situations; there isn't one macroencapsulation technology that's best for all waste streams. For the 2006 Plan, macro technology was reported to save $450M.
Q - Dirk Dunning asked whether the welds will fail with plastic piping. Since the technology is not proven, there is no long-term validation.

A - Tom Baker will send Dirk further information.

Pilot Program for Technology Certification

House Bill 1792, which passed in May 1997, adds a new section to Chapter 43.21A RCW, relating to Certification of Environmental Technologies. The Washington Department of Ecology is directed to:

- participate in technology demonstrations,
- review environmental technology certification programs ,
- develop a certification program for remediation of radioactive and mixed wastes, if funding is available, and
- use the program on a pilot basis for hazardous waste remediation and other environmental technologies.

In response to House Bill 1792, a concept paper for a pilot program at Hanford has been drafted. It will:

- focus on needs, technologies, and markets
- accelerate acceptance and use of innovative environmental technologies and products
- offer objective, credible information on field performance
- provide public-private partnership.

Nancy is working with BHI and FDH on this program.

Q - Lloyd Piper asked if they were looking at California's certification program.

A - No other certification program calls out radioactive and mixed wastes.

<u>D&D Canyon Disposition Initiative</u>

Jerry White stated that there are five canyons at Hanford, and they are the most complex nuclear facilities on the Site. We haven't decided how to dispose of them yet, so we need to collect information for a Record of Decision (ROD). The feasibility study is done. Alternatives range from complete dismantlement to leaving them in place for storage of waste. This was proposed as a large-scale demo and a TDI proposal.

The first step is to characterize the facility and do a performance assessment. We have given several presentations, and the D&D Focus Area and the Robotics Crosscutting Program are interested in providing funding in FY98 and FY99. We will give another presentation to the D&D Focus Area at their upcoming meeting in Miami. They want to fund only technology development activities. Programs should come in with funding for programmatic activities.

The timetable for the ROD is the end of FY 2000. If we decide to leave the facility in place and dispose of LLW in it, there will be other wastes. BHI is trying to put the pieces together for cost savings estimates.

Dennis Faulk said that it is important to push hard to get a ROD as soon as possible. Dirk Dunning disagrees; he thinks the plan is foolhardy and doesn't think the cost savings are there. There isn't enough information on risk and transport through the vadose zone. Don't rush; get the right information first. Jerry asked Dirk to stay involved to help get to the right decision. Barbara Harper (YIN) agrees with Dirk.

‘97 Global D&D Marketplace Symposium

Jim Goodenough provided information about the ‘97 Global D&D Marketplace Symposium that we are participating in. Hanford is sending about 10 people. This technology exchange symposium brings people with needs together with the people with possible solutions. It is a workshop forum to exchange information and ideas, and has international participation, from both DOE and DoD representatives.

1998 HANFORD SCIENCE NEEDS -- **VOTE**

D&D (Sue Garrett)

The science needs were linked to the corresponding technology needs, and any Hanford jargon was explained. Three needs had major revisions, while others had only minor clarifications made.

Q - Is the cesium source identification need a rewrite of a previous need?

A - Yes. The Robotics Crosscutting Program has $450K to develop a system to be used at the basin for “clunk” testing of the cesium capsules. A person goes out and picks up a capsule; if it clunks it may be OK. If not, it may have a leak. A proposal for an automated device is being developed by PNNL with the help of the Waste Encapsulation Storage Facility (WESF). It will replace the “clunk test,” and will probably include some kind of sensor model. Discussions are going on now with WESF engineers. There are two issues: whether or not there is a leak, and, if so, where did it come from.

Q - Tom Engel asked why we are doing this with the science needs. He sees it as a program need.

A - Barbara Harper responded, stating that the EMAB definition of a science need is something that could be done anywhere, without any specific knowledge of the site where the problem exists.

VOTE:
yes 9
no 0

Mixed Waste (Norm Olsen for Wayne Ross)

Only minor editorial changes were made, and timing was added for one need as requested. The following comments were noted:

Tom Engel -- Need #11, Section III: “or other properties” is not meaningful; either identify which properties or take it out.

Tom Engel -- Need #13, Section III: “capable of simulating most of the possible processes...” He doesn't think this is true. It was decided to delete this need and go with the Subcon need.

Need #12 -- different types of radioisotopes act differently in the body. Try to identify how strong various isotopes are and what different methods there are to remove them from the physiological environment.

Barbara Harper -- Need #10: A particular outcome is sought; needs to be deleted or substantially rewritten.

Lloyd: This issue is drawing a lot of attention. The question may be whether we want to spend some of the EMSP science dollars on this, or wait for other researchers who are already studying it. A vote was taken to decide if this need should be dropped. Eight members voted to drop the need, so it was dropped.

Lloyd remarked that we should not predispose the outcome by any of our needs statements. We need to rewrite a few of them to be neutral. Three other comments were more editorial in nature.

In summary, the Mixed Waste Subgroup science needs will be modified to drop #13 and #10 and to modify others so they don’t presuppose outcomes, plus editorial items. Tom Engel wants to review the wording of the changes.

VOTE:
yes 8
no 0

<u>SubCon (Shirley Rawson)</u>

RL-SS30-S was moved out of the Remediation category and into the Transport of Contaminants category. Dennis Faulk asked that the title of this need be changed to “Mobility of Cs Beneath Waste Tanks.”

Tom Engel commented that this Subcon package is a great document. The format is useful to show how science needs are linked to technology needs. He suggested that we use this as a format in the future for all Subgroups. Dennis Faulk agreed and asked Subcon to capture the process and lay it out for the other Subgroups.

Dirk Dunning said that the models are based on static conditions; dynamic conditions are not shown.

VOTE:
yes 8
no 0

Tanks (Loni Peurrung)

Changes since last month:

- most needs were retained as is
- 6 new needs were added and prioritized
- 2 needs were eliminated
- some needs were tuned to address changes in the baseline, fix technology focus, editorial modifications, etc.
- 27 total science needs were endorsed by the Subgroup for FY98.

New tank science needs:

- Hazardous Organic Species in IHLW (low-priority)
- Contaminant Mobility Beneath Tank Farms (high-priority)
- Solids Yield and Deagglomeration (low-priority)
- Tank Integrity Verification (medium-priority)
- Half-Lives of Se-79 and Sn-126 (medium-priority)
- Materials for Long-Term Waste Isolation (medium-priority)

Tank science needs eliminated:

- Chemical and Physical Assessment Needs for Waste Characterization (not timely)
- Waste Forms for Secondary Waste Immobilization (contract changes in TWRS)

Comments:

Tom Engel -- The tank science needs are well written and good. Under “contaminant mobility for tanks”, there is a group working on this and you should work together with them.

Dirk Dunning -- Some half lives vary depending on chemical forms. Wayne Martin said that Ron Brodzinski wrote a white paper which provides information on half lives.

Tom Engel asked about this year’s prioritization. Loni said that the Subgroup did not go back to reprioritize last year’s needs.

VOTE:

yes	7
no	0
abstain	1

Joe Waring asked about the process for next year. Does the Management Council want to see direct linkage back to the technology needs and programs, or should the Subgroups look "outside the box"?

Someone asked about the difference between science and technology needs. The answer is that a science need is knowledge gap, and a technology need is a "gismo". Rod Quinn stated that the EMAB Science Committee sees three levels of science needs: hard needs now, things that could change the baseline performance or cost, and things that could really change the program.

Dirk Dunning noted that we keep running into engineering needs. They fall through the crack because we think that Programs will take care of them.

Question (Vince Panesko, Pacific Rim Enterprise Center): Is there information available about which of the science needs were funded last year? The call for proposals was issued two days ago for proposals in response to D&D science needs. Linkages are currently being made.

FUTURE AGENDA ITEMS

- Annual report on Deployment Center & monthly updates
- FDH, PNNL, BHI technology demonstrations and deployments
- Laser Demo case study
- Salt Lake City action group report
- CETI update
- EM science program -- call for proposals (5 minute update)
- TDI -- next round
- need agenda items to publicize technology deployments
- Mike Hightower -- Innovative Treatment Remediation Program (EM-40 funding to support technology work in groundwater)

VISIT FROM CAVANAUGH MIMS (OAK RIDGE STCG)

A distinguished drop-in guest arrived during the break -- Cavanaugh Mims from DOE-OR, Chair of the Oak Ridge STCG Tanks Subgroup. He brought a 15-minute video showing Hanford tank technologies that have been successfully deployed at Oak Ridge. Cavanaugh posed an interesting question to the Management Council -- "How many of you own a tank?" Only Lloyd Piper raised his hand. Cavanaugh's point was

that the user organizations must participate in the STCG and drive the process to seek technology solutions to their problems.

The video showed a pilot-scale deployment of the Radioactive Tanks Cleaning System. This treatability test was a partnership among DOE, EPA, the Tennessee Department of Environment & Conservation, stakeholders, industry, and community members. Using the technologies shown in the video provided $130M in cost savings and accelerated tank cleanup by 13 years. $400K can be saved annually in monitoring costs. Oak Ridge deployed 25 separate technologies in this project.

Waste Dislodging & Compliance employed a Confined Sluicing End Effector (CSEE) to dislodge tank waste. A Modified Light-Duty Utility Arm with a reach of 16.5 feet is used to position the CSEE in the tank. Houdini, a remotely operated vehicle, was used to move (mine) debris and sludge and to position other tools within the tank. Deployment activities were remotely viewed in the tank through a window.

The tank walls withstood pressure and showed that most of the waste could be removed. Waste was removed at a rate of 20 gallons per minute. Scarifying tests removed 90% of the scale and sludge from the tank walls. The characterization end effector performed a video inspection to verify that the tank was cleaned. 96% of contaminants in the tank were removed. At the end of November 1997, the rest of waste will be removed. In December, equipment will be moved to the south tank farms. From January 1998 through FY 2000, waste will be removed from the south tank farms.

SUBGROUP FY 1997 ANNUAL REPORTS AND FY 1998 WORK PLANS

FY 1997 Annual Reports

Each Subgroup Lead gave highlights of their accomplishments.

D&D (Jim Goodenough)

- Followed the progress of the laser cutting demonstration in the 324 Building B-Cell. The Subgroup recommended the purchase of the laser after the demonstration to be used in future work. B&W recently purchased the unit.

- Reviewed and endorsed three TDI proposals. FDH prepared proposals on NDA of glove ports at PFP and remote characterization of the B-Plant canyon using a gamma camera. BHI prepared a proposal on characterization of U-Plant.

- Followed the progress of the C-Reactor large-scale demonstration and planned the C-Reactor Open House held in October 1997, which included tours of B-Reactor and C-Reactor.

SUBCON (Fred Serier)

- As a precursor to the FY98 science needs process, the Subcon science needs were developed in workshops attended by ER Project managers and engineers (both RL and BHI) and EMSL scientists.

- Endorsed proposals for transmittal to the Subsurface Contaminants Focus Area (Advanced Characterization Approach for Buried Waste Sites at Hanford and Subsurface Heavy Metal Detection System to Enhance Remedial Action Design)

- Endorsed TDI proposals (In Situ Redox Manipulation and Electrical Resistance Tomography)

- Participated in ISM technology peer review conducted by ASME in February 1997. Reviewed and provided comments on the test plan.

Mixed Waste (Joe Waring)

- Endorsed macroencapsulation of mixed waste debris technology demonstration, which was successfully completed at T-Plant in September 1997.

- Endorsed PNNL proposal responding to a high-priority technology need. Obtained user endorsement for the proposed technology solution.

- Continued discussions with the Mixed Waste Focus Area, letting them know that they were not meeting Hanford's needs. They promised to do better and have improved communications with us.

Tanks (Cathy Louie)

- HTI was the big initiative. The Subgroup had good discussions on closure and retrieval performance criteria; performance assessment issues, including vadose zone characterization and monitoring; and tank integrity and leak detection technology.

- TWRS project people made presentations on their mid-level logic diagrams to provide a framework for the technology needs assessment process.

- A self-evaluation was completed by the Subgroup to improve effectiveness, participation of members, etc.

- The slurry monitoring TDI proposal endorsed by the Subgroup was the only Hanford proposal that was funded.

FY 1998 Work Plans

Each Subgroup Lead provided a summary of activities planned for FY 1998.

D&D (Jim Goodenough)

- work to develop better links/relationships with other parts of the EM-50 network.
- determine how we can get project managers to include technologies in their programs; emulate the C-Reactor demo process.
- get better cooperation among the contractors in order to compete

Subcon (Fred Serier)

- focus on better integration with the Focus Area and the contractors
- involve regulators in next science needs workshops with EMSL
- invite presentations on innovative technologies
- participate in peer reviews
- continue to evaluate ISRM
- keep identifying and trying to eliminate barriers to deployment

Mixed Waste (Joe Waring)

- better communication and interaction with other Subgroups
- pursue TRU assay funding; integrate with Tanks

Tanks (Cathy Louie)

- improved communications
- better interactions with the Management Council; bring more issues from the Subgroup to the Management Council for debate/resolution
- invite TWRS project staff to come in to talk/interact with the Subgroup
- take field trips out on the Site to interact with the projects to increase our awareness of programmatic technology needs.

Feedback from the Management Council:

Gary Ballew: Is there a Focus Area for Spent Nuclear Fuels (SNF), or how do we map those needs into the system? There are a couple of SNF needs and no place to bring them to the Subgroups.

Response: SNF has a technical baseline. Their timing and schedule doesn't lend itself to technologies needed to get out of the basin. They need very quick turnaround. The Tanks Subgroup had an SNF person come to talk about it as it relates to the tanks. It was suggested that SNF issues be taken to whichever Subgroup they best apply.

Tom Engel: The Subgroups have done a good job and the results are impressive. Hopefully, the technology and science needs will take less time in the future. He would like to focus on involving more people outside the Hanford system. We seem to be in the mode of a "fund-raising" agency. We need to get off-the-shelf technology that's available in the private sector onto the Site to reduce costs. He would like to see this as a major item in next year's activities. Don't just focus on bringing money in to do in-house work. Focus on how to change the baseline by any means.

Response: It's legitimate for EM-50 to look for things that are already available.

Paul Scott: HTI has the potential to be successful. It is patterned after Oak Ridge.

Lloyd Piper said that bringing issues to the Management Council is a good idea; however, bring a feasible set of options and recommendations.

Rod Quinn suggested that systems be put in place to improve communications. We need to look at success stories like Oak Ridge and emulate them. Other Focus Areas should operate like TFA does, where the users are a key part of the process The window is open to go see Gerald Boyd about re-engineering the EM-50 system.

Jerry White commented that the success BHI has had on C-Reactor and technology support for the Canyon Disposition Initiative is because they got on a plane to DOE-HQ to communicate face-to-face with the program managers.

Nancy asked what happened to the Management Council's request for a communications person. Rod Quinn will check with Tom McClain to see what happened. We need a communications person to develop press releases for the Reach or an STCG newsletter, and to put together packages for trips to Washington, D.C.

We need to brainstorm on what to do to get technology deployments going. Paul Scott said that deployment follows a decision by the project. We need to work with the projects. Timing and schedules need to match.

Debbie Trader challenged the STCG to get back the end user connection, so they can say they know the technology and can use it. The STCG was formed to connect the projects with the technology developers.

Tom Engel: There is a lot of energy on demonstrations. Where's the energy on deployments? We need to find it.

Roger Collis: We need to focus on deployment and find ways to bring project leads into the Subgroups.

Jerry White: BHI is not interested in demonstrations; they are interested in deployments. We need to make the tie between demonstration and deployment. The projects are tight with money, so there is no flexibility to play with demonstrations to see if the technology works.

Rod Quinn: EM-50 technologies were written into the EM-40 baseline for the Modified Light-Duty Utility Arm. It is not a development program; TFA modified the LDUA to get it into the Oak Ridge tank.

Cavanaugh Mims (Oak Ridge) commented that he doesn't demonstrate anything unless he expects to deploy it.

Dave Langstaff relayed an article in D&D magazine that said that a project decision is needed to deploy a technology. A decision should be made before the demonstration. Then information gained from the demonstration can be used in deployment.

Tom Engel said that not every demonstration leads to deployment, but you could ask for a much stronger commitment from the user.

WRAP-UP

The next STCG Management Council meeting will be held on December 17, 1997, in the EESB Snoqualmie Room.